

Appl. No. : 09/804,480  
Filed : March 12, 2001

### REMARKS

Pursuant to the Applicant's election of Claims 1-8, Claims 9-24 have been cancelled without prejudice to pursuing these claims in a divisional, continuation, or continuation-in-part application. Claims 1-8 remain pending in the Application. The Applicant has carefully considered all of the Examiner's rejections but respectfully submits that the pending claims are allowable for at least the reasons presented below.

#### Rejections under § 102

The Examiner rejected Claims 1-8 under 35 U.S.C. § 102(b) as being anticipated by Sinha et al. (1995). The Examiner argued that Sinha discloses optical recording of transients of membrane potential in cells exposed to a compound, and that Sinha thereby anticipates the claims.

Sinha discloses optical recording of transients of membrane potential associated with evoked neural activity in guinea pig hippocampal slices. *See* Abstract. The blocking effect in the presence of the ionotropic glutamate receptor antagonists CNQX and D-APV was also recorded. *See*, page 56, column 2 to page 57 column 2, and Figure 5.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Vendegall Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987); *see also* M.P.E.P. § 2131. Claim 1 requires exposing cells to ***biphasic*** electric fields, which the specification defines at page 10, line 1, as "***a pulse with two parts***, each with an opposite polarity." Sinha does not disclose this claim limitation. Claim 1 also requires that the electric fields exhibit limited spatial variation in intensity in the area of observation of less than about 25% from a mean intensity. As is apparent in Figures 4A, 5A, and 6A, Sinha discloses electrodes having a needle shape. Such electrodes would not produce electric fields having limited spatial variation. In contrast, the instant specification discloses configurations of electrodes designed to produce uniform electric field strength. Accordingly, Sinha does not anticipate Claim 1 or dependent Claims 2-8.

#### Rejections under § 103

The Examiner rejected Claims 1-8 under 35 U.S.C. § 103(a) as being unpatentable over WO 96/41166 (Tsien et al.) in view of Jacobs et al. (1997). The Examiner argued that Tsien

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teaches measurement of transmembrane potentials using FRET, screening for therapeutic drugs that affect membrane potentials, and treating cells with a stimulus that modulates ion channels. The Examiner further argued that while Tsien does not set forth stimulation protocols, Jacobs teaches electric field stimulation, thereby rendering the claims obvious.

Tsien teaches exposing cells to a stimulus which modulates an ion channel, exposing the cells to a sample, and measuring the membrane potential of the cells. Jacobs teaches stimulating  $\text{Ca}^{2+}$  transients with 1 ms current pulses in 1 second bursts of 30 pulses (i.e., 30 Hz).

A *prima facie* case of obviousness requires that all of the claim limitations are taught or suggested by the prior art. See M.P.E.P. § 2143.03. Claim 1 requires exposing cells to *biphasic* electric fields, which the specification defines as at page 10, line 1, as “*a pulse with two parts, each with an opposite polarity.*” Jacobs does not teach or suggest this claim limitation. Furthermore, Claim 1 requires that the electric fields exhibit limited spatial variation in intensity in the area of observation of less than about 25% from a mean intensity. Jacobs does not teach or suggest this claim limitation. Accordingly, Tsien taken with Jacobs does not render Claim 1 or dependent Claims 2-8 obvious.

### CONCLUSION

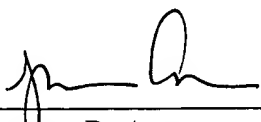
The Applicant respectfully submits that by the foregoing remarks, he has overcome the Examiner's rejections and requests a timely issuance of a Notice of Allowance.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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